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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/768,413 | 01/24/2001 | Michael Seul | 464.1009 CON1 | 4766 |
| 7590 | 11/22/2005 | | EXAMINER | |
| Julie Bowker 1501 Broadway, Suite 1603 New York, NY 10036 | | | KOVAL, MELISSA J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2851 | |

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/768,413 | SEUL ET AL. | |
| | Examiner | Art Unit | |
| | Melissa J. Koval | 2851 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 9-15 is/are allowed.
- 6) Claim(s) 1-8 and 16-19 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 24 January 2001 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/05, 11/04 & 8/03.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Specification

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it exceeds 150 words and includes the prohibited legal phraseology "said". Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al. U.S. Patent 6,312,134 in view of Murakami 6,090,458.

Claim 1 sets forth: "An apparatus for programmably generating an illumination pattern superimposed onto a substrate, said illumination pattern having a predetermined arrangement of light and dark zones, said apparatus comprising:

an illumination source (radiation source 1);

a reconfigurable mask (DMD 3) composed of an array of pixels, said pixels being actively controllable and directly addressable by means of a computer-controlled circuit and computer interface, said computer-controlled circuit being operated using a software program providing temporal control of the intensity of illumination emanating from each pixel so as to form the illumination pattern comprising the predetermined arrangement of light and dark zones;

a projection system (projection system 4) suitable for imaging the reconfigurable mask onto the substrate (substrate 5); and

an imaging system incorporating a camera capable of viewing said substrate with superimposed illumination pattern."

Jain teaches all of the elements of claim 1, however, Jain '134 B1 does not disclose an imaging system incorporating a camera capable of viewing said substrate with a superimposed illumination pattern. Furthermore see column 15, wherein Jain discloses the controlling of pixels to adjust levels of transmissivity and reflectivity.

Murakami discloses in column 3, lines 36 through 44, an image system incorporating a camera for viewing the substrate with the pattern. See Monitor 115 as it connects to camera 114 in Figure 3.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the camera of Murakami to the invention of Jain in order to observe the image on the substrate to ensure that the pattern is superimposed at the current location as taught by Murakami in column 3, lines 45 through 50.

Claim 16 is rejected for the same reasons already applied to rejected claim 1.

Claims 2 through 6 do not patentably distinguish over the teachings of Jain '134 B1 and Murakami '458.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al. U.S. Patent 6,312,134 in view of Murakami U.S. Patent 6,090,458 and Datta et al. U.S. 5,567,304.

Claim 8 sets forth: "An apparatus for programmably reconfiguring an array of particles on a substrate by programmable adjustment of an illumination pattern projected onto a substrate comprising:

an illumination source (radiation source 1);

a reconfigurable mask (DMD 3) composed of an array of pixels, said pixels being actively controllable and directly addressable by means of a computer-controlled circuit and computer interface, said computer-controlled circuit being operated using a software program providing temporal control of the intensity of illumination emanating from each pixel so as to form the illumination pattern comprising the predetermined arrangement of light and dark zones;

a projection system (projection system 4) suitable for imaging the reconfigurable mask onto a substrate (substrate 5), wherein the substrate comprises a light-sensitive planar electrode that is aligned with another planar electrode in substantially parallel arrangement, with said electrodes being separated by a gap, and the gap containing an electrolyte solution which is in contact with said electrodes and which contains colloidal particles suspended in the electrolyte solution; and

an imaging system incorporating a camera capable of viewing said substrate with superimposed illumination pattern."

Jain teaches all of the elements of claim 8, however, Jain '134 B1 does not disclose an imaging system incorporating a camera capable of viewing said substrate with a superimposed illumination pattern. Furthermore see column 15, wherein Jain discloses the controlling of pixels to adjust levels of transmissivity and reflectivity.

Murakami discloses in column 3, lines 36 through 44, an image system incorporating a camera for viewing the substrate with the pattern. See Monitor 115 as it connects to camera 114 in Figure 3.

Datta discloses in column 12, lines 5 through 34, a substrate with electrodes and a gap filled with electrolyte.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the camera of Murakami to the invention of Jain in order to observe the image on the substrate to ensure that the pattern is superimposed at the current location as taught by Murakami in column 3, lines 45 through 50; and furthermore to provide the substrate of Datta to Jain in order to avoid the contact resistance problem as taught by Datta in columns 1 and 2.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al. U.S. Patent 6,312,134 in view of Murakami U.S. Patent 6,090,458 as applied to claim 1 above, and further in view of Datta et al. U.S. 5,567,304.

Furthermore, the difference between the claimed invention and modified Jain (as described above) is a substrate comprising planar electrode being separated by a gap containing electrolyte. Datta discloses in column 12, lines 5 through 34, a substrate with

electrodes and gap filled with electrolyte. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the substrate of Datta to Jain in order to avoid the contact resistance problem as taught by Datta in column 1 and 2.

Claims 17 through 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al. U.S. Patent 6,312,134 in view of Murakami U.S. Patent 6,090,458 as applied to claim 1 above, and further in view of Walt U.S. 6,266,459.

Furthermore, the difference between the claimed invention and modified Jain (as described above) is generating a pattern on the surface of the substrate by exposure of a solvent, a chemical reaction and the wavelength of the light in the visible spectrum. See column 12, line 60 through column 13, line 33 and column 15, lines 1 through 23.) Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the generation of the substrate pattern as taught by Walt by using the light in the visible spectrum to the invention of Jain in order to produce an accurate pattern on the substrate.

Allowable Subject Matter

Claims 9 through 15 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record neither shows nor suggest all of the elements comprising the process of claim 9 including the steps of "creating", "configuring", "illuminating", "using", "acquiring", "analyzing", "iterating" in combination and particularly: "iterating said creating, configuring, illuminating, acquiring and analyzing steps n times, wherein n is an integer from zero to 10,000, using said feature coordinates determined in the (n-1)th analyzing step so as to create a derivative optimized illumination pattern.".

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fateley et al. U.S. Patent Application Publication US 2003/0062422 A1.

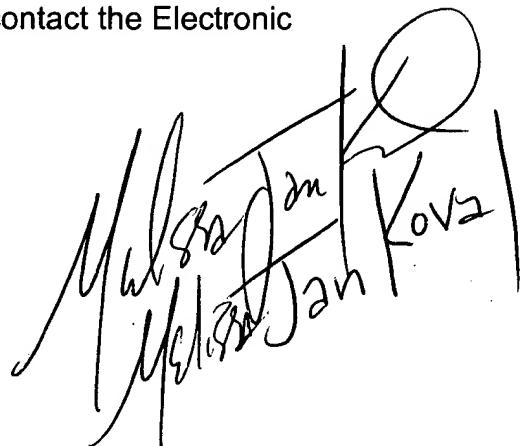
Seul et al. U.S. Patent Application Publication US 2002/0198665 A1 teaches a system and method for programmable illumination pattern generation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa J. Koval whose telephone number is (571) 272-2121. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Melissa Jan Koval
Primary Examiner
Art Unit 2851
MJK

A handwritten signature in black ink, appearing to read "Melissa Jan Koval". The signature is fluid and cursive, with "Melissa" on the top line, "Jan" in the middle, and "Koval" on the bottom line. There are some additional, less distinct strokes and lines extending from the main signature.